

# BEST AVAILABLE COPY

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number  
**WO 2004/092530 A3**

(51) International Patent Classification<sup>7</sup>: **E21B 7/20**

(21) International Application Number:  
PCT/US2004/011177

(22) International Filing Date: 13 April 2004 (13.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/462,750 14 April 2003 (14.04.2003) US

(71) Applicant (for all designated States except US): **ENVEN-  
TURE GLOBAL TECHNOLOGY** [US/US]; 16200 A.  
Park Row, Houston, TX 77084 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **COOK, Robert,  
Lance** [US/US]; 934 Caswell Court, Katy, TX 77450  
(US). **SMOLEN, Randall, Mercer** [US/US]; 3027 Ken-  
ross, Houston, TX 77043 (US). **KENT, Gerald, Edward**

[CA/CA]; #10 - 26120, TWP. 511, Devon, Alberta T7Y  
1B8 (CA). **HAY, Richard, Thomas** [CA/CA]; 5 Lodge-  
pole Court, St. Albert, Alberta T8N 2R8 (CA). **KEEN,  
Jerry, Lavelle, Jr.** [US/US]; 3630 Rolling Terrace, Spring,  
TX 77388 (US).

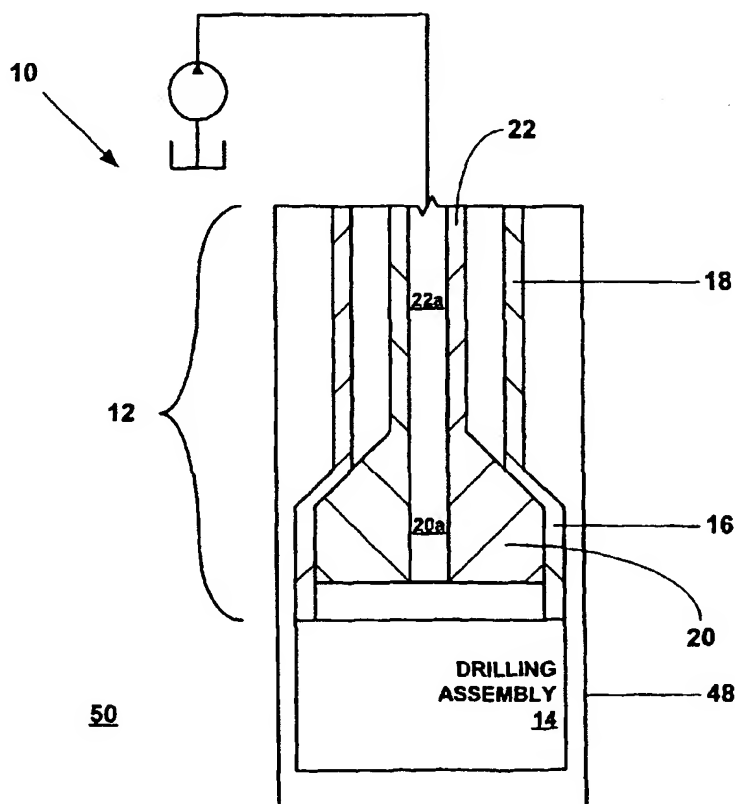
(74) Agent: **MATTINGLY, Todd**; Haynes and Boone, L.L.P.,  
Suite 3100, 901 Main Street, Dallas, TX 75202 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

[Continued on next page]

(54) Title: **RADIALLY EXPANDING CASING AND DRILLING A WELLBORE**

(57) Abstract: A method of radially  
expanding a wellbore casing (18) and  
drilling a wellbore (48).



WO 2004/092530 A3



(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

— of inventorship (Rule 4.17(iv)) for US only

**Published:**

— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) **Date of publication of the international search report:**

21 April 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/11177

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
IPC(7) : E21B 7/20 US CL : 175/22,57,171; 166/208,384		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) U.S. : 175/22,57,171; 166/208,384		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) East: (expan\$4 with (tub\$5 pip\$3 conduit\$1 string\$1 casing\$1 liner\$1)) same drill\$3		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,543,552 B1 (METCALFE et al.) 08 April 2003 (08.04.2003), see entire document, especially Figs. 1-7.	5, 11
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
<b>* Special categories of cited documents:</b>		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search 07 November 2004 (07.11.2004)		Date of mailing of the international search report 14 FEB 2005
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Zakiya N. Walker <i>JHodges</i> Telephone No. (703) 306-1113